



Joint Reprocessing of GPS, GLONASS and SLR

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A joint reprocessing of GPS, GLONASS and SLR observations has been carried out at TU Dresden, TU Munich, AIUB and ETH Zurich. Common a priori models have been applied for the processing of all types of observation to ensure both consistent parameter estimates and the rigorous combination of microwave and optical measurements.

Based on that reprocessing results, we evaluate the impact of adding GLONASS observations to the standard GPS data processing. In particular, changes in station position time series and day boundary overlaps of consecutive satellite arcs are analyzed. In addition, the GNSS orbits derived from microwave measurements are validated using independent SLR range measurements. Our SLR residuals indicate a significant improvement compared to previous results. Furthermore, we evaluate the performance of our high-rate (30s) combined GNSS satellite clocks and discuss associated zero-difference phase residuals.